

REMARKS

The present application was filed on May 26, 2006 with claims 1 through 29. Claims 1 through 29 are presently pending in the above-identified patent application. Claims 1, 16, 26 and 29 are proposed to be amended herein.

5 In the Office Action, the Examiner rejected claims 1-11, 13-15 and 16-25 under 35 U.S.C. §102(e) as being anticipated by Perahia et al. (United States Patent No. 7,352,688), rejected claims 1-15 under 35 U.S.C. §102(e) as being anticipated by Gardner et al. (United States Publication No. 2005/0233709), rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Gardner et al., and rejected claims 26-29 under 35
10 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Gardner et al.

Independent Claims

Independent claims 1, 16, 26 and 29 were rejected under 35 U.S.C. §102(e) or §103(a) as being anticipated by Perahia et al. or Gardner et al., or a combination thereof.

Each independent claim has been amended to emphasize that a legacy preamble is
15 transmitted, as well as at least one *additional* long training symbol *in addition to* the legacy preamble. The legacy preamble itself comprises at least one long training symbol. Thus, in accordance with the present invention, a legacy preamble is transmitted that has at least one long training symbol. In addition, at least one additional long training symbol is transmitted in addition to the preamble.

20 In the references cited by the Examiner, all the referenced long training symbols are *part of* the preamble.

Perahia et al.

Regarding claims 1 and 16, the Examiner asserts that Perahia et al. discloses transmitting a legacy preamble (per IEEE 802.11) having at least one long training symbol
25 (FIGS. 5 and 6, 1st Long Training Symbol 506) and at least one additional long training symbol (FIGS. 5 and 6, 2nd Long Training Symbol 506).

FIGS. 5 and 6, however, depict a “preamble structure” and an “alternative preamble structure,” respectively. Col. 3, lines 13-18. In FIG. 5, the top “preamble” is for a transmitter antenna element referred to as antenna element 1 while the bottom “preamble” refers
30 to an antenna element 2. The two preambles are transmitted simultaneously. Col. 6, lines 29-32.

The preambles in FIGS. 5 and 6 comprise fields 502-512. *There is **no** long training symbol in addition to the preamble.*

Gardner et al.

Regarding claims 1 and 16, the Examiner asserts that Gardner et al. discloses
5 transmitting a legacy preamble (pars. 0021-0023) having at least one long training symbol (FIG.
4, Long Training Symbols L2-L4) and at least one additional long training symbol (FIGS. 4 and
8, Long Training Symbol L2, followed by Long Training Symbol L3 and L4, respectively.).

FIG. 1 illustrates a conventional (legacy) preamble format in accordance with
IEEE 802.11a. Par. 0012. FIG. 4 illustrates exemplary long training sequences for the preamble
10 of FIG. 1. Par. 0015. FIG. 8 illustrates a modified preamble. Par. 0019.

As noted in par. 0056, FIG. 8 shows a *preamble* for a two transmitter MIMO
packet. The structure is the *same* as for 802.11a (i.e., the same as a legacy preamble), “*but some
differences*” are that a) l_0, l_1, d_0, d_1 may contain out-of-band subcarriers, b) s_1, l_1, d_1 can be
cyclically shifted relative to s_0, l_0, d_0 or c) l_0 and l_1 can contain subcarrier sequences that have a
15 low cross-correlation with the same subcarrier sequences of the 802.11a long training symbol
sequence. FIG. 8 does not disclose or suggest a long training symbol *in addition to the legacy
preamble*.

It is also noted that at least portions of Gardner et al. do not pre-date the present
application. Only those portions of Gardner et al. that were included in U.S. Provisional Patent
20 Application Serial No. 60/461,999 would pre-date the present application. It is clear from a
reading of Gardner et al. that some material was added to the utility application following the
filing of the Provisional.

Thus, Perahia et al. or Gardner et al., alone or in combination, do not disclose or
suggest transmitting a legacy preamble *and* at least one *additional* long training symbol, as
25 required by independent claims 1, 16, 26 and 29.

Dependent Claims

Dependent claims 2-15, 17-25 and 27-28 are dependent on independent claims 1,
16, and 26, and are therefore patentably distinguished over Perahia et al. or Gardner et al., alone
or in combination, because of their dependency from independent claims 1, 16, and 26 for the
30 reasons set forth above, as well as other elements these claims add in combination to their base
claim.

Conclusion

All of the pending claims, i.e., claims 1-29, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions
5 for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



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